Connecting Water Education to Wisconsin Academic Standards

Wisconsin Model Academic Standards that address the study of water include both content and specific performance standards. The content standards address water as a theme. The performance level standards address the study of water. Besides Science, Social Studies, and Environmental Education, other standards are potentially addressed depending on the method and investigation teachers select.

SCIENCE

A. SCIENCE CONNECTIONS

CONTENT STANDARD

Students in Wisconsin will understand that among the science disciplines, there are unifying themes: systems, order, organization, and interactions; evidence, models and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; and form and function.

B. NATURE OF SCIENCE

CONTENT STANDARD

Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.

C. SCIENCE INQUIRY

CONTENT STANDARD

Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.

D. PHYSICAL SCIENCE

D.4.3 Understand that substances can exist in different states - solid, liquid, gas

E. EARTH AND SPACE SCIENCE

E.4.3 Develop descriptions of land and water masses of the earth and of Wisconsin's rocks and minerals, using the common vocabulary of earth and space science

E.4.5 Describe the weather commonly found in Wisconsin in terms of clouds, temperature, humidity, and forms of precipitation, and the changes that occur over time, including seasonal changes

E.4.6 Using the science themes, find patterns and cycles in the earth's daily, yearly, and long-term changes

E.4.7 Using the science themes, describe resources used in the home, community, and nation as a whole

E.8.6 Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and nonrenewable resources

F. LIFE AND ENVIRONMENTAL SCIENCE

F.4.1 Discover how each organism meets its basic needs for water, nutrients, protection, and energy in order to survive

F.4.2 Investigate how organisms, especially plants, respond to both internal cues (the need for water) and external cues (changes in the environment)

F.8.8 Show through investigations how organisms both depend on and contribute to the balance or imbalance of populations and/or ecosystems, which in turn contribute to the total system of life on the planet
F.8.10 Project how current trends in human resource use and population growth will influence the natural environment, and show how current policies affect those trends
F.12.8 Using the science themes, infer changes in ecosystems prompted by the introduction of new species, environmental conditions, chemicals, and air, water, or earth pollution

H. SCIENCE IN SOCIAL AND PERSONAL PERSPECTIVES
H.4.4 Develop a list of issues that citizens must make decisions about and describe a strategy for becoming informed about the science behind these issues
H.8.1 Evaluate the scientific evidence used in various media (for example, television, radio, Internet, popular press and scientific journals) to address a social issue, using criteria of accuracy, logic, bias, relevance of data, and credibility of sources
H.8.2 Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision
H.8.3 Understand the consequences of decisions affecting personal health and safety
H.12.5 Investigate how current plans or proposals concerning resource management, scientific knowledge, or technological development will have an impact on the environment, ecology, and quality of life in a community or region

SOCIAL STUDIES

A. GEOGRAPHY: PEOPLE, PLACES, & ENVIRONMENTS
A.4.2 Locate on a map or globe physical features such as continents, oceans, mountain ranges, and land forms, natural features such as resources, flora, and fauna; and human features such as cities, states, and national borders
A.4.4 Describe and give examples of ways in which people interact with the physical environment, including use of land, location of communities, methods of construction, and design of shelters
A.4.6 Identify and distinguish between predictable environmental changes, such as weather patterns and seasons, and unpredictable changes, such as floods and droughts, and describe the social and economic effects of these changes
A.4.8 Identify major changes in the local community that have been caused by human beings, such as a construction project, a new highway, a building torn down, or a fire; discuss reasons for these changes; and explain their probable effects on the community and the environment
A.4.9 Give examples to show how scientific and technological knowledge has led to environmental changes, such as pollution prevention measures, air-conditioning, and solar heating
A.8.4 Conduct a historical study to analyze the use of the local environment in a Wisconsin community and to explain the effect of this use on the environment
A.8.6 Describe and distinguish between the environmental effect on the earth of short-term physical changes, such as those caused by floods, droughts, and snowstorms, and long-term physical changes, such as those caused by plate tectonics, erosion, and glaciation
A.8.11 Give examples of the causes and consequences of current global issues, such as the expansion of global markets, the urbanization of developing world, the consumption of natural resources, and the extinction of species, and suggest possible responses by various individuals, groups, and nation

B. HISTORY: TIME, CONTINUITY, & CHANGE

B.4.4 Compare and contrast changes in contemporary life with life in the past by looking at social, economic, political, and cultural roles played by individuals and groups

B.4.8 Compare past and present technologies related to energy, transportation and communications and describe the effects of technological change, either beneficial or harmful, on people and the environment

B.8.8 Identify major scientific discoveries and technological innovations and describe their social and economic effects on society

B.8.9 Explain the need for laws and policies to regulate science and technology

B.8.11 Summarize major issues associated with the history, culture, tribal sovereignty, and current status of the American Indian tribes and bands in Wisconsin

C. POLITICAL SCIENCE AND CITIZENSHIP

C.8.7 Locate, organize, and use relevant information to understand an issue of public concern, take a position, and advocate the position in a debate

D. ECONOMICS: PRODUCTION, DISTRIBUTION, EXCHANGE, CONSUMPTION

D.4.7 Describe how personal economic decisions, such as deciding what to buy, what to recycle, or how much to contribute to people in need, can affect the lives of people in Wisconsin, the United States, and the world

D.8.7 Identify the location of concentrations of selected natural resources and describe how their acquisition and distribution generates trade and shapes economic patterns

D.8.11 Describe how personal decisions can have a global impact on issues such as trade agreements, recycling, and conserving the environment

ENVIRONMENTAL EDUCATION

A. QUESTIONING AND ANALYSIS
CONTENT STANDARD

Students in Wisconsin will use credible research methods to investigate environmental questions, revise their personal understanding to accommodate new knowledge and perspectives, and be able to communicate this understanding to others.

B. KNOWLEDGE OF ENVIRONMENTAL PROCESSES AND SYSTEMS
CONTENT STANDARD

Students in Wisconsin will demonstrate an understanding of the natural environment and the interrelationships among natural systems.

B.4.7 Draw a simple hydrologic cycle

B.4.8 Describe and give examples of natural resources, e.g., water, minerals, soils, air

B.4.10 Describe how they use natural resources in their daily lives

B.4.12 Determine the cause of different types of pollution

B.8.14 Identify the natural resources that are found in Wisconsin and those that are imported

B.8.15 Analyze how people impact their environment through resource use

B.8.18 Identify major air, water, or land pollutants and their sources

B.8.19 Distinguish between point and nonpoint source pollution

B.8.24 Create a timeline of Wisconsin history in resource management

B.12.2 Describe the value of ecosystems from a natural and human perspective; e.g., food, shelter, flood control, water purification
B.12.12 Describe the environmental and societal cost and benefits of allocating resources in various ways and identify management strategies to maintain economic and environmental sustainability
B.12.18 Analyze cause and effect relationships of pollutants and other environmental changes on human health
B.12.19 Illustrate how environmental quality affects the economic well-being of a community

C. ENVIRONMENTAL ISSUE INVESTIGATION SKILLS
CONTENT STANDARD
Students in Wisconsin will be able to identify, investigate, and evaluate environmental problems and issues.
C.8.2 Use environmental monitoring techniques; such as, observations, chemical analysis, and computer mapping software to collect data about environmental problems

D. DECISION AND ACTION SKILLS
CONTENT STANDARD
Students in Wisconsin will use findings from environmental issue investigations to develop decision-making skills, and to gain experience in citizen action skills.

E. PERSONAL AND CIVIC RESPONSIBILITY
CONTENT STANDARD
Students in Wisconsin will develop an understanding and commitment to environmental stewardship.
E.4.2 Understand how their personal actions impact their civic responsibilities toward the environment
E.12.3 Take action in regard to environmental issues in the home, school, or communities